

## **REMARKS**

The above amendment and these remarks are responsive to the non-final Office action of Examiner Joshua A. Kading, dated 18 October 2004.

Claims 1-4, 7-10, 12-15, 17, 19-21, 24-27, and 30-33 are in the case, with claims 7-10, 19, and 30-33 objected to as depending from rejected claims, but otherwise allowable, and the remaining claims not as yet allowed.

### ***Drawings***

The objections previously made to drawing Figures 7 and 8A have been withdrawn.

### ***Specification***

Objection was made to the specification in the previous Office action, and the specification amended in response in

the amendment of 14 June 2004. However, upon review of that amendment, it appears that in three cases the reference to the page and line number in the specification was in error. Consequently, Applicants submit in this Amendment the proper corrections to be made to the specification. Further additional grammatical, typographical and spelling errors have been corrected.

### ***Claim Objections***

Claims 6, 12, 13, 26, 27, and 35 have been objected to for various informalities.

Applicants have canceled claims 6 and 35 and amended claims 12, 13, 26 and 27 to correct the informalities noted by the Examiner.

### ***35 U.S.C. 112, first paragraph***

The rejections of claims 3-10 under 35 U.S.C. 112, first paragraph, have been withdrawn.

**35 U.S.C. 112, second paragraph**

The rejections of claims 5, 11-12, 18, and 19 under 35 U.S.C. 112, second paragraph, have been withdrawn.

**35 U.S.C. 101**

The rejections of claims 18-20 under 35 U.S.C. 101 have been withdrawn.

**35 U.S.C. 102**

*Claim 13 has been rejected under 35 U.S.C. 102(e) over Kim et al. (U.S. Patent 6,219,704 B1).*

Applicants have amended claim 13.

Kim is not using a ratio average wait time ( $T_w$ ) and a standard deviation of wait time ( $\sigma T_w$ ), as is set forth in the claim to derive discrete utilization by way of estimates

of minimum and maximum discrete utilization.

Applicants urge that claim 13 be allowed.

**35 U.S.C. 103**

*Claim 14 has been rejected under 35 U.S.C. 103(a) over Kim et al. in view of applicants' admitted prior art (AAPA).*

Claim 14 depends from claim 13, and is distinguished from Kim et al. as previously described.

The alleged "admitted prior art" does not teach the use of average wait time ( $T_w$ ) and a standard deviation of wait time ( $\sigma T_w$ ) as set forth in claim 13.

*Claim 15 has been rejected under 35 U.S.C. 103(a) over Kim et al. in view of McKee et al. (U.S. Patent 5,477,531).*

Claim 15 also depends from claim 13, and is distinguished from Kim et al. as previously described. The

Examiner relies on McKee for its teaching of "two way echo packets". Thus, neither Kim nor McKee teach the use of nor suggest singly or in combination average wait time ( $T_w$ ) and a standard deviation of wait time ( $\sigma T_w$ ) as set forth in claims 13 and 15.

Applicants urge that rejections of claims 14 and 15 under 35 U.S.C. 103(a) be withdrawn.

*Claims 1, 11, 16, 20, 21, 22, 23, and 34 have been rejected under 35 U.S.C. 103(a) over Kim et al. in view of Pruitt et al. (U.S. Patent 6,597,907 B1).*

Claims 11, 16, 22, 23, and 34 have been canceled without prejudice.

Further with respect to claim 13 (which now incorporates the limitations of claim 16,) Applicants respectfully traverse the Examiner's assertion that Pruitt, could be utilized in a network system in combination with Kim.

Kim is predicting the delay packets sent into a network will experience. Kim is not deriving the characteristics of the network that cause that delay. Applicants' patent application does this. In other words, the present application uses samples of work performed by the network to determine the network's propagation and device latency, the network's speed, and the network's utilization. Kim does none of this. Moreover, Kim's patent fails to distinguish between the network's conversational and streaming speed and conversational and streaming utilization, and even fails to distinguish between streaming applications and conversational applications. The present patent application makes all of these distinctions and provides a means for discovering their values by analyzing how the network performs when samples are introduced into it.

Pruitt describes a system and method for detection of memory leak (as defined at Col. 7, lines 443-49). In order to identify such memory leak, periodic measurement of memory utilization at one or more shared memory unit is accomplished by periodically polling a number in use counter associated with each shared memory unit. (Col. 7, lines 51-56.) (This is not a measure of wait time, as that is

derived by applicants.) A deadlocked resource condition is determined to exist if the measured utilization is inconsistent with a predicted memory utilization (Col. 7, lines 62-67), which in a first embodiment is detected when the determined mean and the determined variance in utilization over a predefined time interval are inconsistent with a predicted relation at a predetermined confidence level. (Col. 8, lines 1-21.)

The Examiner refers to Pruitt at Col. 9, lines 27-55. Here is taught that the ratio of the mean and the variance approximates a constant value, and where that ratio falls below a predicted constant value for some extended time, then memory leak is determined.

This is not what applicants are doing, and applicants argue that in applying Pruitt in combination with Kim the Examiner is drawing on hindsight reasoning based on applicants' own disclosure which teaches the use of a function of the ratio of wait time to the standard deviation of wait time in deriving discrete utilization.

With respect to claims 1 and 21 applicants have amended

the claims so as to clarify their method involves evaluating a network from observations of work performed on packets by a system including the network, specifically by determining a best approximation of end to end discrete utilization from minimum network discrete utilization and maximum network discrete utilization.

*Claims 12 and 35 have been rejected under 35 U.S.C. 103(a) over Kim et al. and Pruitt et al., and further in view of AAPA.*

Applicants have canceled claim 35 without prejudice.

With respect to claim 12, Applicants have previously distinguished Kim and Pruitt. Further, the claim has been amended to incorporate the limitations of claim 11, from which it depended and which has now been canceled without prejudice, and further to incorporate limitations from allowed claim 7.

*Claims 2, 17, 18, 24, and 25 have been rejected under 35 U.S.C. 103(a) over Kim et al. and Pruitt et al. and further*

*in view of Appanna et al. (U.S. Patent 6,678,244 B1).*

Claim 18 has been canceled without prejudice.

Claim 2 depends from claim 1, claim 17 from claim 13, and claim 25 from claim 21.

With respect to claims 2, 17, and 25, applicants have previously distinguished Kim and Pruitt as discussed above with respect to claim 13. With respect to Appanna, the teaching cited by the Examiner at Col. 1, lines 60-67 refers to monitoring packets discarded for lack of buffer space, but does not teach applicants claimed use of such discarded (dropped) packets in the manner claimed: factoring instances of dropped messages as full utilization in calculating discrete utilization.

*Claims 5 and 28 have been rejected under 35 U.S.C. 103(a) over Kim et al. in view of Appanna et al.*

Applicants have canceled claims 5 and 28 without prejudice.

*Claims 6 and 29 have been rejected under 35 U.S.C. 103(a) over Kim et al. and Appanna et al. and further in view of Kirby (U.S. Patent 5,142,531).*

Applicants have canceled claims 6 and 29 without prejudice.

*Claims 3, 4, 26, and 27 have been rejected under 35 U.S.C. 103(a) over AAPA in view of Pruitt et al.*

Applicants traverse.

Pruitt describes a system and method for detection of memory leak (as defined at Col. 7, lines 43-49). In order to identify such memory leak, periodic measurement of memory utilization at one or more shared memory unit is accomplished by periodically polling a number in use counter associated with each shared memory unit. (Col. 7, lines 51-56.) (This is not a measure of wait time, as that is derived by applicants.) A deadlocked resource condition is determined to exist if the measured utilization is

inconsistent with a predicted memory utilization (Col. 7, lines 62-67), which in a first embodiment is detected when the determined mean and the determined variance in utilization over a predefined time interval are inconsistent with a predicted relation at a predetermined confidence level. (Col. 8, lines 1-21.)

The Examiner refers to Pruitt at Col. 9, lines 27-55. Here is taught that the ratio of the mean and the variance approximates a constant value, and where that ratio falls below a predicted constant value for some extended time, then memory leak is determined.

This is not what applicants are doing, and applicants argue that in applying Pruitt in combination with AAPA the Examiner is drawing on hindsight reasoning based on applicants' own disclosure which teaches the use of a function of the ratio of wait time to the standard deviation of wait time in deriving discrete utilization.

Applicants urge, therefore, that the rejections under 35 U.S.C. 103(a) of claims 1-4, 11-15, 17, 20-21, 24-27 be withdrawn, and the claims allowed.

### ***Allowable Subject Matter***

Claims 7-10, 19, and 30-33 have been objected to as being dependent upon a rejected base claim (13), but otherwise allowable.

Applicants have amended claims 7, 19, and 30 to incorporate the limitations of their respective base and intervening claims, and claims 8-19 and 31-33 depend from these amended claims.

### **SUMMARY AND CONCLUSION**

Applicants urge that the above amendments be entered and the case passed to issue with claims 1-4, 7-10, 12-15, 17, 19-21, 24-27, and 30-33.


The Application is believed to be in condition for allowance and such action by the Examiner is urged. Should

differences remain, however, which do not place one/more of the remaining claims in condition for allowance, the Examiner is requested to phone the undersigned at the number provided below for the purpose of providing constructive assistance and suggestions in accordance with M.P.E.P. Sections 707.02(j) and 707.03 in order that allowable claims can be presented, thereby placing the Application in condition for allowance without further proceedings being necessary.

Sincerely,

H. R. Gail, Jr. et al.

By

  
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